Palmetto AVIATION

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Col. Abercrombie installed as CAP Wing Commander

Col. Douglas T. Abercrombie, a 28-year-veteran of the Civil Air Patrol, took over as commander of the South Carolina Wing last month, replacing Col. William E. Hobson who had served in the position for the past four years.

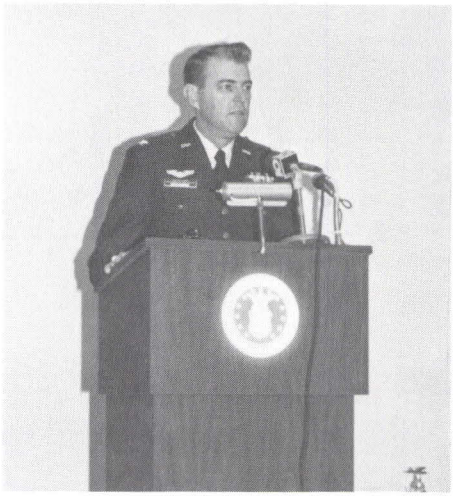
This is Col. Abercrombie's second term as head of the state's wing. He had previously served as wing commander from December, 1975 to October, 1978.

Col. Abercrombie's began his career as cadet in the Tampa, Fl squadron in 1957. He has held a variety of command posts both on squadron and wing level in North and South Carolina, including deputy commander of the Charleston Composite Squadron and Director of Cadet Programs for the North Carolina Wing.

In 1972, he was named S.C. Wing Senior Training Officer. He was named deputy wing commander in March, 1975, and Wing Commander in December, 1975. In 1978, he moved to the Middle East Region (MER) staff as Director of Cadet Programs. In 1980, he served as squadron Commander of the CSRA Cadet Squadron in Augusta, GA. In July, 1982, he was named assistant inspector of the MER staff and in March, MER Safety Officer. In July, 1983, he was named Deputy Wing Commander of the S.C. Wing .

During his previous tenure as commander, he was instrumental in establishing and selecting the site for the present Wing Headquarters building. He also began an aircraft modernization program and a flight program for cadets called Operation Eagles Fly.

In civilian life, Col. Abercrombie is the manager of the ACE Electric and Supply Co., in Augusta. He is a resident of Belvedere. Besides being a civil war buff, his hobbies include woodworking and art collecting.



Col. Douglas T. Abercrombie CAP S.C. Wing Commander.

During the change of command ceremonies held in Columbia Jan. 5, Col. Abercrombie announced that Col. Hobson would continue to play an active role in wing affairs as the State Liaison Officer. Col Hobson was also named director of communications for the Middle East Region.

Col. Hobson had served as commander of the S.C. Wing since December, 1981. He has been a member of CAP since 1944 and was originally assigned as a flight officer in the Norfolk Composite Squadron. He came to South Carolina in Jan. 1965, joined the Columbia Composite Squadron in 1966 and transferred to the Wing Staff as Assistant Wing Safety Officer in 1971.

Commission Budget Cut Is Ordered

The South Carolina Aeronautics Commission, along with other state agencies, has been directed by the Budget and Control board to cut two percent from its 1985-86 budget to keep the state's economy in the black.

According to assistant director Alan Alexander, the cut mandated actually amounts to four percent since half the budget year is already past.

The Aeronautics Commission will make every effort to keep from having to curtail services, but at the same time, airport operators and others who depend on the Commission for help should be aware of the budgetary constraints.

If you have a specific question regarding services at your airport, call the Commission toll free at 1-800-922-0574.

Camden FBO Bill Hawkins says lack of pilot proficiency is a widespread problem that needs to be addressed, page 6.

PALMETTO AVIATION is an official publication of the South Carolina Aeronautics Commission. It is designed to inform members of the aviation community, and others interested in aviation, of local developments in aviation and aviation facilities and to keep readers abreast of national and international trends in aviation.
The Aeronautics Commission is a state agency created in 1935 by the S.C. General Assembly to foster and promote air commerce within the state.

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"Liens on aircraft for services performed"

BY HENRY M. BURWELL, ESQ.

South Carolina has a lien statute which protects a person that furnishes supplies or accessories for an aircraft or provides contacts of indemnity for that aircraft in order to secure payment for that person. This statute establishes that a person may obtain a lien against the aircraft for his reasonable charge for labor, tools, machinery and equipment, accessories, materials, fuel, oils, lubricants, earned premiums and other supplies furnished in connection with service for that aircraft.

The person asserting the lien should file within 90 days after provision of such services, supplies, or contracts of indemnity, a statement which is sworn giving a true account of the person's claim. Further, this sworn statement must be filed in the office of the Register of Mesne Conveyances or Clerk of Court of the county within which the aircraft was located at the time such services, supplies, or contracts of indemnity were furnished. The statement must also contain the name of the owner of the aircraft, if known, and a description of the aircraft sufficient for identification. (Section 29-15-100 Code of Laws of South Carolina.)

A petition to perfect the lien through enforcement proceedings should be filed in the Court of Common Pleas for the county in which the aircraft was located at the time the lien arose. Further, the proceeding to enforce the lien against the aircraft should be begun within 180 days after the person has furnished services, supplies, or contracts of indemnity on behalf of the aircraft. If enforcement proceedings are not begun within this 180 day period, the claimant risks having the lien not to be perfected or even dissolved.

AOPA/FAA/ATCA ANNOUNCE FLY-A-CONTROLLER PROGRAM

Communications between air traffic controllers and general aviation pilots will be greatly enhanced via a new program announced last month by the Aircraft Owners and Pilots Association, the Federal Aviation Administration, and the Air Traffic Control Association.

FAA Administrator Donald D. Engen, AOPA President John L. Baker, and ATCA President Gabe Hartl kicked off the new Fly-A-Controller program, saying that "we jointly feel that better communications and understanding between controllers and general aviation pilots will improve the system for all."

Fly-A-Controller is a voluntary program organized by AOPA, with the cooperation of the FAA and ATCA. Participating general aviation pilots will be asking FAA controllers and flight service personnel to fly with them on a local flight, which can be planned to cover the airspace for which that controller is responsible.

"Controllers will be able to experience the ATC system from the front seat of a general aviation airplane," said AOPA's Baker. "By understanding the capabilities of the airplane and the high workload environment of controlled airspace, controllers will learn much about what it's like on the other side of the microphone."

FAA Administrator Engen noted that controllers "will have an opportunity to discuss their views of general aviation flying, how air traffic can better serve general aviation, and how general aviation pilots can operate more efficiently and safely within the system. Furthermore, pilots will get a better understanding of the pressures controllers face daily."

"AOPA will be urging all of its 265,000 members to fly a controller," said Baker. The pilot association has a brochure available for interested pilots, describing the details of how to contact an ATC facility and what the flight should include. The FAA controller will also submit a "Familiarization Flight Trip Report" to the facility supervisor.

Essay contest stimulates aviation awareness

The Federal Aviation Administration (FAA) and the National Association of State Aviation Officials (NASAO) are sponsoring a national aviation awareness contest for students.

The theme of the contest is "Aviation in My Community." It is open to all students from the fourth through the 12th grade.

The FAA and NASAO hope the essay contest will stimulate thinking about aviation to help students better understand air transportation, its effects on people's lives and the economy of the nation.

Both the FAA and NASAO are concerned over the public's misconceptions and lack of awareness regarding aviation in the country.

"If we are to maintain our high standards of aviation safety, modernize our airways and improve our nation's airport system, we must make the public more aware of the importance of aviation," FAA administrator Donald Engen said.

Entries must be handwritten in ink or typed and be the work of the submitting student. Judges will consider historical accuracy, originality, interest, neatness, spelling, punctuation and adherence to the subject. Entries with portions copied directly from a reference book, without credit to the author, will be disqualified.

The essays will be judged in the following categories:

Category	Grade	No. Words
Senior	10-12	1000-1200
Junior	7-9	600-800
Intermediate	4-6	300-600

Entries must be received by March 3 and winners will be announced by May 5. Entries should be sent to: S.C. Aeronautics Commission, P.O. Drawer 1987, Columbia, SC 29202.

Senior national winners will receive $1,500 in cash or a scholarship and Junior and Intermediate winners will receive $500 in cash or savings bond.

MRS. MARIE ROSS
WNAAA President

Darlington woman named WNAAA head

Mrs. Marie Ross of Darlington, was recently elected President of the Women's National Agricultural Aviation Association at the 1985 annual National Agricultural Aviation Convention in Reno, Nevada.

Marie has served as past president of the South Carolina Women's Agricultural Aviation Association and as a National Director and past national Treasurer of WNAAA.

She feels it is a great honor to have been selected to serve as the national president and will have as a goal for the women's auxiliary a supportive role for promoting membership in the National Agricultural Aviation Association and positive public relations for the men in agriculture aviation nationally and internationally.

Marie has an interest in flying not only from the business aspect, but has soloed a Cherokee 180; however, admits she could never become an aerial applicator and will be satisfied with her favorite hobby—flower gardening.

She has been employed by the USDA for the past 18 years. She is married to Jack Ross, owner of Jack Ross Flying Service in Darlington.

Breakfast Club

On Jan. 12, the South Carolina Breakfast Club met in Orangeburg for the annual election of officers. The same officers that served during 1985 were re-elected for 1986. They are: Gerald Ballard, president; Fred Powell, Up-state vice president; David Oswalt, Mid-state vice president; Rudy Branham, Lower state vice president; Anne Hawkins, secretary and Coy Derrick, historian.

The meeting schedule through June, 1986 is listed below: Anne Hawkins says there are "quite a few open dates after July" and asks anyone wanting to schedule a meeting during the latter part of the year to please call her at 432-3095 or 432-9595.

Feb. 9 Charleston Executive Aiport, John's Island

Feb. 23. Greenville Downtown Airport, Greenville

Mar. 9 Owens Airport Columbia

Mar. 23 Dillon County Airport Dillon

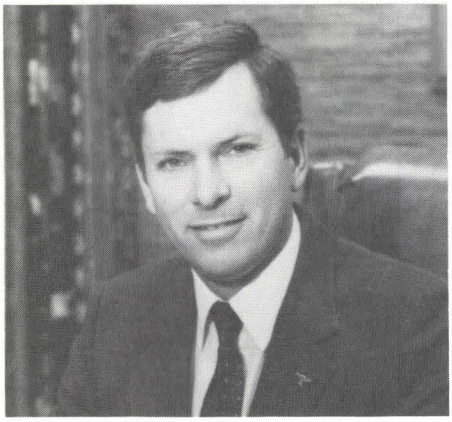
Apr. 6 Aiken Municipal Aiport, Aiken

Apr. 20 Bryant Field, Rock Hill

May 4 Berkeley County, Airport Moncks Corner

May 18 Laurens County Airport Laurens

Breakfast club members normally arrive between 9 and 9:30 a.m. Breakfast starts at 10 and is usually over by 11 a.m.



DEAN HARTON

Harton named president of Hawthorne

Hawthorne Corporation, a Charleston based company, announced the election of Dean Harton to the office of President for the Corporation and its nine subsidiary and affiliated companies.

Harton joined in 1978 as a flight instructor. Since that time, he has served in several capacities from air taxi to financial officer for the corporation. In 1978, he was elected to the office of Vice President and member of the Board of Directors. In 1982, he was elected to the office of Vice President and member of the Board of Directors. In 1982, he was elected Executive Vice President and assumed operational responsibility for all sections of the company. As President and Chief Operating Officer, Harton will be responsible for all parent and subsidiary operations. The company currently employs 460 people and has 19 operations in 16 cities in 10 states.

Hawthorne board chairman Vernon B. Strickland said, "Mr. Harton served Hawthorne well for over 17 years and I am confident that the company and its people will continue to grow and prosper under his leadership."

Mr. Harton is an active member of the Trident Chamber of Commerce Legislative Task Force, the Trident United Way Planning Board and the Trident 100 Committee. He is a past member of the Aviation/Aerospace Writers Association with several nationally published articles to his credit. He is also an experienced pilot with over 7600 hours logged flight time.

Lack of proficiency seen as serious problem

Editor's note: The following article was submitted by Bill Hawkins, FBO at Woodward Field, Camden. He said he is often faced with the problem of lack of proficiency or marginal experience in pilots that want to rent airplanes. The examples in his article are real people.

We heartily agree that no FBO should let someone fly an airplane unless the operator makes sure he has the experience, skill and judgement to handle the equipment and mission.

By BILL HAWKINS
Hawk Aviation Service

Pilots who do not fly on a regular basis are not saving money. They are a safety problem and a potential accident.

It would be hard to say what hours any individual pilot should fly to stay proficient. All of us have different experience levels. Some pilots do not see an airplane from one flight to another nor do they read aviation information to keep up with changes in the aviation system. Some flights are months between. That's no way to stay proficient.

Examples of some of these pilots follow.

--Aircraft owner: Private pilot that has been flying about 25 years. He has 1000 hours total time and about 100 hours in the last five years. He telephones the airport about 30 minutes before departure and says, "pull her out and check her over for me." For the line boy, this involves checking tires, washing off dust, cleaning the windshield, checking oil and gas, draining sumps and probably a battery boost. The pilot does a walk around and is off on a four-hour trip one way.

--Aircraft renter: This one is a private pilot that has been flying about eight years. He has 200 hours total time and only four hours in the last two years. He calls to rent an aircraft to let a passenger take pictures low and slow. Needless to say, he didn't get it.

--Instructor pilot: This man is highly experienced but his log shows only eight hours in the last three years. He wanted to rent a trainer to get a relative current. I had him ride with another instructor for an hour. He was rusty and did not have the feel for flying that we all should have.

Being rusty and out of touch does not make for a safe attitude. Don't be upset if, in the near future, you don't get to use a rental aircraft or borrow one because someone questions your proficiency. The insurance companies and the courts are coming down hard on aircraft owners who do not thoroughly check out pilots who use their airplanes. Check for current medicals, make sure the biennial flight reviews are up to date and that they have current fresh experience or be prepared to bear the consequences if you don't.

Remember, South Carolina is one of four states in the United States that has laws making the aircraft owner absolutely responsible for damage to property or for personal injury in the event of an accident.

George Rubino Resigns Position

George A. Rubino, director of airports for the Charleston County Aviation Authority since 1979, has left his position to become a partner with a transportation consulting group in Florida.

Rubino, known as Kelly to associates, announced last month that he is resigning.

"This has not been an easy decision as I have thoroughly enjoyed being in Charleston and working with the Authority," Rubino said in a letter to Authority Chairman William E. Craver, Jr. "Since the opening of the terminal, I have been investigating many options. I have been very happy here but feel it is time to undertake new challenges."

Rubino became director of airports in late 1979 after James J. Gehring left to take an assistant director's position at the airport in Jidda, Saudi Arabia. Rubino had joined the Charleston airport staff as director of engineering.

Rubino will become a partner with Lott Parrish & Associates in Tampa. He will open a new office there for the group which is changing its name to the LPA group Inc.

CAUSE AND CIRCUMSTANCE

The Need to Stay Current

Just how important is recent experience, particularly if you are a fairly seasoned pilot? Before answering that question, remember what the regulations say about instrument currency. FAR Part 61, Paragraph 57(e) states:

> "No pilot may act as pilot in command under IFR, nor in weather conditions less than the minimums prescribed for VFR, unless he has, within the past six months. . . logged at least six hours of instrument time under actual or simulated IFR conditions, at least three of which were in flight in the category of aircraft involved, including at least six instrument approaches, or passed an instrument competency check in the category of aircraft involved."

But is that rule in the FARs because some bureaucrat thought it sounded good, or is there wisdom in its message?

The answer may be found in the case of a police officer who was employed in his department's helicopter section. He was a fairly experienced professional pilot with over 2,000 flight hours, about 60 percent of which were in fixed wing aircraft. His instrument time, however, was a bit low: Only 78 of his flying hours were under instrument conditions, and a mere 25.9 hours were conducted in actual instrument weather. But during his IFR activities, he had made 92 instrument approaches, and he maintained his aeronautical skills by flying helicopters regularly in his capacity as a police officer.

One morning in May a few years ago, the city that employed him assigned the officer-pilot to fly four city officials to Annapolis, Maryland, wait there, and then return in the afternoon. As had been the case on several other occasions, a neighbor of one of the city officials loaned the city his Beech Travel Air for the trip. The day before the flight, the aircraft's owner filled the main tanks (there were about three to five gallons in each auxiliary tank), and taxied the Beechcraft to the police hangar so the aircraft would be in position.

Because the fifth seat in the Travel Air would be used, the owner discussed weight-and-balance considerations with the pilot, requesting him to calculate the aircraft's all-up weight and c.g. before commencing the trip to the Baltimore area. The pilot assured the owner that two of the four passengers were not large men and that they would be placed in the aft seats, but he agreed with the owner to use Baltimore International rather than the smaller airport at Annapolis because the Travel Air would be flying at or near its maximum takeoff weight.

Although the experienced pilot had flown within the previous two weeks, he had not flown on instruments within the preceding six months and did not meet the requirements of FAR Part 61.57(e).

Apparently there was no discussion, however, about the pilot's recent instrument experience. Although the police officer had flown within the previous two weeks, he had not flown on instruments within the preceding six months and did not fulfill FAR Part 61.57(e).

The day of the flight was definitely IFR: BWI had a 300- to 500-foot overcast, 1.5-mile visibility and light drizzle and fog. An instrument flight plan was filed, and the departure was successful.

When the aircraft reached the Baltimore area and was cleared for an ILS approach to Runway 10, the airplane flew through the localizer as the radar controller continued to monitor the Travel Air after it was released to Baltimore Tower. The pilot had been requested to keep his speed up since he was about five miles behind a Shorts Skyvan and there was a McDonnell Douglas DC-9 behind the Travel Air; therefore, the Beech pilot's failure to turn inbound on the ILS presented a potential spacing problem for approach control.

The tower controller was then requested by approach control to vector the Travel Air northbound and clear it up to 2,500 for re-spacing, and the clearance was given to the aircraft's pilot. His response, however, was not precise; it said something about climbing to 2,000.

The radar track for the aircraft indicated that the pilot was not responding as directed by ATC. At the time of the tower's request that the Travel Air turn left to 360 degrees and climb to 2,500 feet, the aircraft was at about 1,800 feet and achieving a groundspeed of about 150 knots. It then descended to about 1,400 feet and turned to the *right* about 360 degrees. In the process of completing this turn, the Travel Air continued descending until it reached 700 feet, during which time its groundspeed had dropped to 120 knots.

During the next 14 seconds, the aircraft turned another 90 degrees, zoomed to 1,900 feet and slowed to a groundspeed of 104 knots. Within 19 more seconds, it turned 180 degrees to the left, plummeted back to about 700 feet and decelerated to 68 knots. Fourteen seconds later it had climbed to 1,400 feet and turned right about 90 degrees as its groundspeed remained essentially unchanged. Four seconds later, the Travel Air disappeared from the radar screen; its wreckage and the bodies of the five occupants were discovered shortly thereafter, almost directly below where radar last painted it.

The NTSB determined that the Travel Air was intact, with all essential systems operational, at the time of impact. The aircraft's c.g., however, was between 1.3 to 2.7 inches behind its aft limit, and its handling qualities would have been adversely affected by that imbalance. The elevator trim tab was found in the maximum nose-down position.

This accident, which probably was caused by the pilot's lack of instrument currency coupled with improper loading of the aircraft, serves as a reminder of how important recent IFR experience is to successful instrument flying. It emphasizes our responsibilities to police ourselves when it comes to keeping current.

Unfortunately for the owner of the fateful Travel Air, the accident also bears another message concerning the legal risks of loaning property. He was sued for several million dollars by the estates of the deceased, which claimed in essence that he should have determined that the pilot was properly qualified for the flight. The fact that he had (1) loaned the aircraft with no demand or expectation of compensation; (2) had done so on several occasions out of a sense of civic duty; and (3) that the city, not the aircraft owner, had selected their employe to conduct the trip as part of his job, did not protect him from being sued. In fact, the aircraft's owner decided to settle out of court rather than risk the loss of his company, which was the registered owner of the aircraft.

BY JOHN W. OLCOTT

AVEMCO
FLYING SAFETY UPDATE

Tips on Winter Flying

Most pilots are familiar with winter conditions in their particular area. However, a distance of a few miles may change the environment enough to present new problems to an inexperienced pilot. There are certain precautions that are significant to winter flying.

Flight planning during winter months will require special knowledge in order to protect the aircraft as well as the pilot. Extra precautions should be used.

Of course, file a flight plan. A flight plan, in conjunction with an ELT and a little knowledge on winter survival, may save your life.

Aircraft Preparation

Most mechanical equipment, including aircraft and their components, are designed by manufacturers to operate within certain temperature extremes. Manufacturers generally can predict their product's performance in temperature extremes and outline precautions to be taken to prevent premature failures.

Baffling and winter covers—Baffles are recommended by some manufacturers to be used in augmenter tubes. Winter fronts and oil cooler covers are also added to some engine installations. FAA approval is required for installation of these unless the aircraft manufacturer has provided the approval. When baffles are installed on an aircraft, a cylinder head temperature gauge is recommended, particularly if wide temperature differences are to be encountered.

Engine Oil—The oil is extremely important in low temperatures. Check your aircraft manual for proper weight oil to be used in low temperature ranges.

Oil Breather—The crankcase breather deserves special consideration in cold weather preparation. A number of engine failures have resulted from a frozen crankcase breather line which caused pressure to build up, sometimes blowing the oil filler cap off or rupturing a case seal, which caused the loss of the oil supply.

The water which causes the breather line freezing is a natural byproduct of heating and cooling of engine parts. When the crankcase vapor cools, it condenses in the breather line subsequently freezing it closed. Special care is recommended during the preflight to assure that the breather system is free of ice.

Hose Clamps, Hoses, Hydraulic Fittings and Seals—An important phase of cold weather preparation is inspection of all hose lines, flexible tubing, and seals for deterioration. After replacing all doubtful components, be certain that all clamps and fittings are properly torqued to the manufacturer's specifications for cold weather.

Cabin Heater—Many aircraft are equipped with cabin heater shrouds which enclose the muffler or portions of the exhaust system. It is imperative that a thorough inspection of the heater system be made to eliminate the possibility of carbon monoxide entering the cockpit or cabin area.

Control Cables—Because of contraction and expansion caused by temperature changes, control cables should be properly adjusted to compensate for the temperature changes encountered.

Oil Pressure-Controlled Propellers—Propeller control difficulties can be encountered due to congealed oil. The installation of a recirculating oil system for the propeller and feathering system has proved helpful in the extremely cold climates. Caution should be taken when intentionally feathering propellers for training purposes to assure that the propeller is unfeathered before the oil in the system becomes congealed.

Care of Batteries—Wet cell batteries require some special consideration during cold weather. It is recommended that they be kept fully charged or removed from the aircraft when parked outside to prevent loss of power caused by cold temperatures and the possibility of freezing.

Wheel Wells and Wheel Pants—During thawing conditions, mud and slush can be thrown into wheel wells during taxiing and takeoff. If frozen during flight, this mud and slush could create landing gear problems. The practice of recycling the gear after a takeoff in this condition should be used as an emergency procedure only. The safest method is to avoid these conditions with retractable gear aircraft. It is recommended that wheel pants installed on fixed gear aircraft be removed to prevent the possibility of frozen substances locking the wheels or brakes.

Operation of Aircraft

The thoroughness of a preflight inspection is important in temperature extremes. It is natural to hurry over the preflight of the aircraft and equipment particularly when the aircraft is outside in the cold. However, this is the time you should do your best preflight inspection.

Fuel Contamination—Fuel contamination is always a possibility in cold climates. Modern fuel pumping facilities are generally equipped with good filtration equipment, and the oil companies attempt to deliver pure fuel to your aircraft. However, even with the best of fuel and precautions, if your aircraft has been warm and then is parked with half empty tanks in the cold, the possibility of condensation of water in the tanks exist.

Fueling Facilities—Another hazard in cold climates is the danger of fueling from makeshift fueling facilities. Fuel drums or "case gas," even if refinery sealed, can contain rust and somehow contaminants can find their way into the fuel. Cases are on record of fuel being delivered from unidentified containers which was not aviation fuel. As a precaution:

1. Where possible, fuel from modern fueling facilities; fill your tanks as soon as possible after landing, and drain fuel sumps to remove any water which may have been introduced.
2. Be sure the fuel being delivered is, in fact, aviation fuel and is the correct grade (octane) for your engine.
3. If a fuel source other than (1.) is used, be sure to filter the fuel as it goes into your tanks. NOTE: A funnel with a dirty worn out chamois skin is not a filter, nor will a new, clean chamois filter out water after the chamois is saturated with water. Many filters are available which are more effective than the old chamois. Most imitation chamois will not filter water.
4. Special precautions and filtering are necessary with kerosene and other turbine fuels. Manufacturers can supply full details on handling these fuels.

Aircraft Fuel Filters and Sumps—Fuel filters and sumps (including each tank sump) should be equipped with quick drains. Sufficient fuel should be drawn off into a transparent container to see if the fuel is free of contaminants. Experienced operators place the aircraft in level flight position, and the fuel is allowed to settle before sumps and filters are drained. All fuel sumps on the aircraft are drained including individual tank sumps.

Extra care should be taken during changes in temperature, particularly when it nears the freezing level. Ice may be in the tanks which may turn to water when the temperature rises, and may filter down into the carburetor causing engine failure. During freeze-up in the fall, water can freeze in lines and filters causing stoppage. If fuel does not drain freely from sumps, this would indicate a line or sump is obstructed by sediment or ice.

There are approved anti-ice additives that may be used. Where aircraft fuel tanks do not have quick drains installed, it is advisable to drain a substantial amount (1 quart or more) of fuel from the gascolator;

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Winter Flying

Continued from page 6

then change the selector value and allow the fuel to drain from the other tank.

Aircraft Preheat—Low temperatures can change the viscosity of engine oil, batteries can lose a high percentage of their effectiveness, instruments can stick, and warning lights, when "pushed to test," can stick in the pushed position. Because of the above, preheat of engines as well as cockpit before starting is considered advisable in low temperatures.

Extreme caution should be used in the preheat process to avoid fire. The following precautions are recommended:

1. Preheat the aircraft by storing in a heated hangar, if possible.
2. Use only heaters that are in good condition and do not fuel the heater while it is running.
3. During the heating process, do not leave the aircraft unattended. Keep a fire extinguisher handy for the attendant.
4. Do not place heat ducting so it will blow hot air directly on parts of the aircraft; such as, upholstery, canvas engine covers, flexible fuel, oil and hydraulic lines or other items that may cause fires.

Engine Starts—Be sure to follow manufacturer's procedures. In moderately cold weather, engines are sometimes started without preheat. Particular care is recommended during this type of start. Oil is partially congealed and turning the engines is difficult for the starter or by hand.

There is a tendency to overprime, which results in washed-down cylinder walls and possible scouring of the walls. This also results in poor compression and, consequently, harder starting. Sometimes, aircraft fires have been started by overprime, when the engine fires and the exhaust system contains raw fuel. Other fires are caused by backfires through the carburetor. It is good practice to have a fireguard handy during these starts.

Another cold start problem that plagues an unpreheated engine is icing over the sparkplug electrodes. This happens when an engine fires only a few revolutions and then quits. There has been sufficient combustion to cause some water in the cylinders but insufficient combustion to heat them up. This little bit of water condenses on the sparkplug electrodes, freezes to ice, and shorts them out.

The only remedy is heat. When no large heat source is available, the plugs are removed from the engine and heated to the point where no more moisture is present.

Engines can quit during prolonged idling because sufficient heat is not produced to keep the plugs from fouling out. Engines which quit under these circumstances are frequently found to have iced-over plugs.

After the engine starts, use of carburetor heat may assist in fuel vaporization until the engine obtains sufficient heat.

Radios—Should not be tuned prior to starting.

Removal of Ice, Snow, and Frost—A common winter accident is trying to take off with frost on the wing surface. All frost, snow and ice *must* be removed before attempting flight. It is best to place the aircraft in a heated hangar. If so, make sure the water does not run into the control surface hinges or crevices and freeze when the aircraft is taken outside. Alcohol or one of the ice removal compounds can also be used.

Blowing Snow—If an aircraft is parked in an area of blowing snow, special attention should be given to openings in the aircraft where snow can enter, freeze solid, and obstruct operation. These areas include: pitot tubes, heater intakes, carburetor intakes, anti-torque and elevator controls, and main wheel and tail wheel wells, where snow can freeze around elevator and rudder controls.

Fuel Vents—Fuel tank vents should be checked before each flight. A vent plugged by ice or snow can cause engine stoppage, collapse of the tank, and possibly very expensive damage.

Taxiing—A pilot should keep in mind that braking action on ice or snow is generally poor. Short turns and quick stops should be avoided. Do not taxi through small snowdrifts or snowbanks along the edge of the runway. Often there is solid ice under the snow.

Takeoff

Takeoffs in cold weather offer some distinct advantages, but they also offer some special problems. A few points to remember:

1. Do not overboost supercharged engines. This is easy to do because at very low density altitude, the engine "thinks" it is operating as much as 8,000 feet below sea level in certain situations.

   Care should be exercised in operating normally aspirated engines. Power output increases at about 1% for each ten degrees of temperature below that of standard air. At −40°F an engine will develop 10% more than rated power even though RPM and MP limits are not exceeded.
2. If the temperature rises, do not expect the same performance from your aircraft as when it was operated at the lower density altitudes of cold weather.
3. Use carburetor heat as required. In some cases, it is necessary to use heat to vaporize the fuel. Gasoline does not vaporize readily at very cold temperatures.

   Do not use carburetor heat in such a manner that it raises the mixture temperature barely to freezing or just a little below. In such cases, it may be inducing carburetor icing. An accurate mixture temperature gauge is a good investment for cold weather operation. It may be best to use carburetor heat on takeoff in very cold weather in extreme cases.

   If your aircraft is equipped with a heated pitot tube, turn it on prior to takeoff. It is wise to anticipate the loss of an airspeed indicator or most any other instrument during a cold weather takeoff—especially if the cabin section has not been preheated.

Climbout

During climbout, keep a close watch on head temperature gauges. Due to restrictions (baffles) to cooling air flow installed for cold weather operation and the possibility of extreme temperature inversions, it is possible to overheat the engine at normal climb speeds. If the head temperature nears the critical stage, increase the airspeed or open the cowl flaps or both.

Landing

A landing surface can be very treacherous in cold weather operations. In addition, caution is advised regarding other hazards, such as snow banks on the sides of the runways and poorly marked runways.

Advance information about the current conditions of the runway surface should be obtained. If it is not readily available, take the time to circle the field before landing to look for drifts or other obstacles.

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General Aviation Records safest year in 25 years

General aviation pilots continued their 25-year-long trend of improving safety as evidenced by record-low accident figures in 1985, according to statistics compiled by the National Transportation Safety Board.

While flying 80 percent of the nation's flights and transporting a half million people daily, general aviation showed a nine percent drop in last year's total accidents compared to 1984, and a 16 percent decrease in fatalities. In 1985, general aviation's fatal accident rate per 100,000 aircraft hours flown--1.53-- was 30 percent lower than it was 10 years ago. The Aircraft Owners and Pilots Association, the nation's largest pilot organization, said the 1985 general aviation safety record was the best in 25 years.

"General aviation continues to dramatically improve its safety record from year to year," said John L. Baker, president of the 265,000-member AOPA. "General aviation pilots consistently prove themselves to be responsible, safety-conscious individuals who constantly strive to improve and upgrade their flying skills."

Even though the 32 million hours that general aviation flew in 1985 were higher than in 1984, fatalities fell below 1000, a record low. Baker said that this exemplary record "shows quite clearly that general aviation pilots are competent and proficient aviators whose contributions to the nation's air transportation system help make it the safest and the best in the world."

New committee to search sites in Cherokee

A new airport site search committee has been formed in Cherokee County after the FAA recommended another location for the proposed facility.

Cherokee County Council Chairman J.R. Stroupe said last month he formed the committee after receiving a letter from Sam Austin, manager of the FAA Atlanta Airports District Office.

Council had recently reaffirmed its intention to locate an airport near U.S. 29 on the Broad River, but Austin said the site would be very expensive to develop and recommended consideration of less expensive sites.

Stroupe said the committee will search for additional sites and explore all options open the the county.

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